

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE <div style="text-align: center;">J</div>		PAGE OF PAGES <div style="text-align: center;">1 6</div>	
2. AMENDMENT/MODIFICATION NO. <div style="text-align: center;">0001</div>		3. EFFECTIVE DATE <div style="text-align: center;">11-Jan-2005</div>		4. REQUISITION/PURCHASE REQ. NO. <div style="text-align: center;">W16ROE-4350-7182</div>		5. PROJECT NO.(If applicable)	
6. ISSUED BY USA ENGINEER DISTRICT, NEW YORK ATTN:CENAN-CT ROOM 1843 26 FEDERAL PLAZA NEW YORK NY 10278		CODE <div style="text-align: center;">W912DS</div>		7. ADMINISTERED BY (If other than item 6) <div style="text-align: center; font-weight: bold;">See Item 6</div>			
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)				<input checked="" type="checkbox"/> 9A. AMENDMENT OF SOLICITATION NO. W912DS-05-R-0005			
				<input checked="" type="checkbox"/> 9B. DATED (SEE ITEM 11) 05-Jan-2005			
				10A. MOD. OF CONTRACT/ORDER NO.			
				10B. DATED (SEE ITEM 13)			
CODE		FACILITY CODE					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning <u>1</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)							
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
D. OTHER (Specify type of modification and authority)							
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) The solicitation is amended as follows: 1. To incorporate and reissue revised drawings; 2. To incorporate and reissue revised specifications; 3. To incorporate contractor(s)' submitted questions and provide answers to such, herein. The proposal due date remains unchanged for 17 Feb 05 at 1400 hours local time. NOTE: OFFERORS MUST ACKNOWLEDGE RECEIPT OF THIS AMENDMENT BY THE DATE SPECIFIED IN THE SOLICITATION (OR AS AMENDED) BY ONE OF THE FOLLOWING METHODS: IN THE SPACE PROVIDED ON THE SF1442, BY SEPARATE LETTER, OR BY TELEGRAM, OR BY SIGNING BLOCK 15 BELOW. FAILURE TO ACKNOWLEDGE AMENDMENTS BY THE DATE AND TIME SPECIFIED MAY RESULT IN REJECTION OF YOUR BID IN ACCORDANCE WITH THE LATE BID, LATE MODIFICATIONS OF BIDS OR LATE WITHDRAWAL OF BIDS (FAR14.304). Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
				TEL: _____ EMAIL: _____			
15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)		16C. DATE SIGNED 11-Jan-2005	

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION SF 30 - BLOCK 14 CONTINUATION PAGE

The following have been added by full text:

AMENDMENT 0001 - INFO

The following changes shall be made to the drawings and specifications.

DRAWINGS

The following drawings have been **REVISED** and **REISSUED**:

L1.01	Layout and Materials Plan
C001	Civil General Notes and Legends
C002	Erosion, Sediment Control, and Staging Plan
C102	Demolition Plan
A000	Abbreviations, Legends and Notes
A106	Sixth Floor Plan
A313	Stairs 1 & 2 Sections
A610	Interior Elevations – 1
A612	Interior Elevations – 3
A616	Interior Elevations – 7
A618	Interior Elevations – 9
A721	First Floor Finish Plan
A721A	First Floor Finish Plan (ALT.) (Bid Option No. 20)
A831	Section Details – 2
A921	Finish Schedule – 1
LS100	Basement Life Safety Plan
LS101	First Floor Life Safety Plan
LS102	Second Floor Life Safety Plan
LS103	Third Floor Safety Plan
LS104	Fourth Floor Life Safety Plan
LS105	Fifth Floor Life Safety Plan
LS106	Sixth Floor Life Safety Plan
E001	Electrical Symbol List
E002	Electrical Abbreviations and Notes
E101	Electrical Site Plan
E102	Electrical Site Notes and Details
E103	Electrical Grounding & Lightning Protection Plan
E200	Electrical Basement Receptacles Plan
E201	Electrical First Floor Receptacles Plan
E202	Electrical Second Floor Receptacles Plan
E203	Electrical Third Floor Receptacles Plan
E204	Electrical Fourth Floor Receptacles Plan
E205	Electrical Fifth Floor Receptacles Plan
E206	Electrical Sixth Floor Receptacles Plan
E250	Electrical Basement Power Plan
E251	Electrical First Floor Power Plan
E252	Electrical Second Floor Power Plan
E253	Electrical Third Floor Power Plan

E254	Electrical Fourth Floor Power Plan
E255	Electrical Fifth Floor Power Plan
E256	Electrical Sixth Floor Power Plan
E257	Electrical Roof Power Plan
E300	Electrical Basement Lighting Plan
E301	Electrical First Floor Lighting Plan
E302	Electrical Second Floor Lighting Plan
E303	Electrical Third Floor Lighting Plan
E304	Electrical Fourth Floor Lighting Plan
E305	Electrical Fifth Floor Lighting Plan
E306	Electrical Sixth Floor Lighting Plan
E307	Electrical Roof Lighting Plan
E350	Electrical Basement Lighting Control Plan
E351	Electrical First Floor Lighting Control Plan
E352	Electrical Second Floor Lighting Control Plan
E353	Electrical Third Floor Lighting Control Plan
E354	Electrical Fourth Floor Lighting Control Plan
E355	Electrical Fifth Floor Lighting Control Plan
E356	Electrical Sixth Floor Lighting Control Plan
E357	Electrical Roof Lighting Control Plan
E400	Electrical Basement Systems Plan
E401	Electrical First Floor Systems Plan
E402	Electrical Second Floor Systems Plan
E403	Electrical Third Floor Systems Plan
E404	Electrical Fourth Floor Systems Plan
E405	Electrical Fifth Floor Systems Plan
E406	Electrical Sixth Floor Systems Plan
E407	Electrical Roof Systems Plan
E450	Electrical AV and Paging Systems Symbol List and Notes
E451	Electrical AV System Plan
E452	Electrical AV System Plan – 2
E453	Electrical AV System Plan – 3
E454	Electrical AV System Plan – 4
E455	Electrical AV System Plan – 5
E456	Electrical AV System Plan – 6
E457	Electrical AV System Plan – 7
E458	Electrical AV System Plan – 8
E459	Electrical AV System Plan – 9
E460	Electrical AV System Plan – 10
E461	Electrical Paging System Plan –1
E462	Electrical Paging System Plan –2
E463	Electrical Paging System Plan –3
E464	Electrical Paging System Plan –4
E465	Electrical Paging System Plan –5
E466	Electrical Paging System Plan –6
E467	Electrical Paging System Plan –7
E500	Electrical Basement Fire Alarm System Plan
E501	Electrical First Floor Fire Alarm System Plan
E502	Electrical Second Floor Fire Alarm System Plan
E503	Electrical Third Floor Fire Alarm System Plan
E504	Electrical Fourth Floor Fire Alarm System Plan
E505	Electrical Fifth Floor Fire Alarm System Plan
E506	Electrical Sixth Floor Fire Alarm System Plan
E507	Electrical Roof Fire Alarm System Plan
E601	Electrical Power Single Line Diagram

E602	Electrical Power Riser Diagram
E603	Electrical Grounding System Riser Diagram
E604	Electrical Lighting Control System Network Diagram
E605	Electrical Fire Alarm System Riser Diagram
E606	Electrical Systems Riser Diagram – 1
E607	Electrical Systems Riser Diagram – 2
E608	Electrical Systems Riser Diagram – 3
E609	Electrical Systems Riser Diagram – 4
E701	Electrical Details –1
E702	Electrical Details –2
E703	Electrical Details –3
E704	Electrical Details –4
E705	Electrical Details –5
E706	Electrical Details –6
E707	Electrical Details –7
E708	Electrical Details –8
E709	Electrical Details –9
E710	Electrical Details –10
E711	Electrical Details –11
E712	Electrical Details –12
E713	Electrical Details –13
E714	Electrical Details –14
E715	Electrical Details –15
E716	Electrical Details –16
E717	Electrical Details –17
E718	Electrical Details –18
E719	Electrical Details –19
E722	Electrical Details –22
E723	Electrical Details –23
E724	Electrical Details –24
E725	Electrical Details –25
E726	Electrical Details – 26
E901	Electrical Panel Schedules – 1
E902	Electrical Panel Schedules – 2
E903	Electrical Panel Schedules – 3
E904	Electrical Panel Schedules – 4
E905	Electrical Panel Schedules – 5
E906	Electrical Panel Schedules – 6
E907	Electrical Panel Schedules – 7
E908	Electrical Panel Schedules – 8
E909	Electrical Panel Schedules – 9
E910	Electrical Panel Schedules – 10
E911	Electrical Panel Schedules – 11
E912	Electrical Panel Schedules – 12
E913	Electrical Panel Schedules – 13
E914	Electrical Panel Schedules – 14
E921	Electrical Lighting Control Schedule
E922	Electrical Feeder & Transformer Schedules
E923	Electrical Branch Circuit Wiring Tables

The following drawings have been **DELETED**:

E720	Electrical Details – 20
E721	Electrical Details –21

SPECIFICATIONS

The following specifications have been **REVISED** and attached with this amendment:

01030	Options
08710	Door Hardware
08810	Glass and Glazing

BIDDER'S QUESTIONS AND GOVERNMENT REPLY

Attached, for information only are the questions submitted by various prospective offerors and the respective answers:

1. Section 00110 Para 3.2 does not mention anything regarding key personnel but there is a resume form and other parts of the RFP suggest that this information is required. What key personnel positions should be included? Should an organizational chart be included? Can the resumes be provided in an alternate format as long as all of the required information is included?

ANS: Key management personnel resumes and org charts are not required in this submittal. Omit page 18 of 123 of the solicitation and any other references associated with providing information regarding key management personnel.

2. We could not download the drawings from the website. Are they available yet?

ANS: The drawings are available on the website to download. Download requires the latest version of MaxView reader.

3. Do the Table of Contents, cover letter, tabs, etc count toward the 25 page limit for the Technical Proposal?

ANS: The 25 page limit pertains to VOL II complete including cover letter, tabs, etc..

4. Are Johnson Controllers are compatible with the base system (Tridium)?

ANS: No. Honeywell XL-15 controller or approved equal shall be utilized for the HVAC system. The approved equal must be capable of being controlled remotely from the power plant, compatible with the existing Tridium system and capable of being downloaded to via the "Workplace Pro" software.

(End of Summary of Changes)

SECTION 01030

OPTIONS

PART 1 GENERAL

1.1 SUMMARY

This section specifies administrative and procedural requirements for options along with their technical descriptions.

1.2 DEFINITIONS

"Option" means a unilateral right in a contract by which, for a specified time, the Government may elect to purchase additional supplies or services called by the contract, or may elect to extend the term of the contract. Notice To Proceed of individual options as noted below shall not affect the Completion Date of the base Contract as determined by the base Contract Notice to Proceed.

1.3 GENERAL

The extent of work for each option is indicated on the drawings. In the event of any differences between the drawings and the options described below, the descriptions below shall govern.

1.4 COORDINATION

The Contractor shall coordinate related work and modify or adjust adjacent work as necessary to ensure that work affected by each exercised option is complete and fully integrated into the project. The Contractor shall provide appropriate detailing to properly terminate or transition from option to base bid work and option to option work. The Contracting Officer will review and approve in writing any and all Contractor generated documents. The Contracting Officer will review and approve in writing any and all Contractor generated documents.

1.5 SCHEDULE

A "Schedule of Options" is included as part of this section. Drawings referenced in the schedule contain requirements for materials and methods necessary to achieve the work described under each option.

Include as part of each option, miscellaneous devices, accessory objects and similar items incidental to or required for a complete installation whether or not mentioned as part of the option.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 SCHEDULE OF OPTIONS

3.1.1 Bid Option No. 1

Includes limestone window surrounds as shown. (Base bid includes no limestone window surrounds; in base bid exterior granite wraps into window openings as shown on Dwg. A845.)

3.1.2 Bid Option No. 2

Includes granite-clad interior partitions on first floor as shown. (Base bid includes no interior granite; in base bid partitions shown as granite-clad are to be GWB on steel framing. See Dwg. A900.)

3.1.3 Bid Option No. 3

Includes granite-clad interior partitions on basement, 2nd, 3rd, 4th, 5th, and 6th floors as shown. (Base bid includes no interior granite; in base bid partitions shown as granite-clad are to be GWB on steel framing. See Dwg. A900.)

3.1.4 Bid Option No. 4

Not used.

3.1.5 Bid Option No. 5

Includes provision and installation of circulation and reference desks and canopies on second floor shown on Dwgs. A402, A702 & A870-872. Electrical/telecom infrastructure for the desks is included in base bid.)

3.1.6 Bid Option No. 6

Not used.

3.1.7 Bid Option No. 7

Includes provision and installation of illuminated aluminum display cased on first floor as shown on Dwg. A101. (Partition work and electrical infrastructure are included in base bid.)

3.1.8 Bid Option No. 8

Not used.

3.1.9 Bid Option No. 9

Includes provision and installation of custom architectural casework shown on Dwgs. A102-106 & A873-874, including rotunda millwork at central stair on second floor, bookcases recessed into granite rotunda walls on floors 2,

3, 4, 5, and illuminated display cases in the West Point Room. (Electrical infrastructure for the display cases included in base bid.)

3.1.10 Bid Option No. 10

Not used.

3.1.11 Bid Option No. 11

Not Used.

3.1.12 Bid Option No. 12

Not used.

3.1.13 Bid Option No. 13

Not Used.

3.1.14 Bid Option No. 14

Not Used.

3.1.15 Bid Option No. 15

Not Used.

3.1.16 Bid Option No. 16

Not Used.

3.1.17 Bid Option No. 17

Includes provision and installation of granite pavers at the Building entrances shown on landscape and civil drawings, Dwg. L4.01, L4.02, and C-103. (Concrete pavers are included in the base bid.)

3.1.18 Bid Option No. 18

Not Used.

3.1.19 Bid Option No. 19

Includes incised stone medallions and text at the east and west facades, and the south entrance, shown on drawings A210, A202, A203, A204A, A847 and A848. (Involves elimination of two windows; see A202.)

3.1.20 Bid Option No. 20

Includes resinous terrazzo flooring in lieu of stained concrete at the first floor rotunda, cafe, main corridors, and vestibules, shown on drawings A721A, A721B, A856, and A857.

-- End of Section --

SECTION 08710

DOOR HARDWARE

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM E 283	(1991) Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
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BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

BHMA A156.1	(1997) Butts and Hinges (BHMA 101)
BHMA A156.2	(1996) Bored and Preassembled Locks and Latches (BHMA 601)
BHMA A156.3	(1994) Exit Devices (BHMA 701)
BHMA A156.4	(1992) Door Controls - Closers (BHMA 301)
BHMA A156.5	(1992) Auxiliary Locks & Associated Products (BHMA 501)
BHMA A156.6	(1994) Architectural Door Trim (BHMA 1001)
BHMA A156.7	(1988) Template Hinge Dimensions
BHMA A156.8	(1994) Door Controls - Overhead Holders (BHMA 311)
BHMA A156.13	(1994) Mortise Locks & Latches (BHMA 621)
BHMA A156.15	(1995) Closer Holder Release Devices
BHMA A156.16	(1997) Auxiliary Hardware
BHMA A156.18	(1993) Materials and Finishes (BHMA 1301)
BHMA A156.21	(1996) Thresholds
BHMA A156.22	(1996) Door Gasketing Systems

THOMAS JEFFERSON HALL USMA
WEST POINT, NEW YORK

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 80 (1999) Fire Doors and Fire Windows

NFPA 101 (1997) Life Safety Code

STEEL DOOR INSTITUTE (SDOI)

SDI 100 (1991) Standard Steel Doors and Frames

UNDERWRITERS LABORATORIES (UL)

UL Bld Mat Dir (1999) Building Materials Directory

1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-02 Shop Drawings

Hardware schedule; G, AE

Keying system

SD-03 Product Data and Catalog Cuts

Hardware items; G, AE

SD-04 Samples

Hardware items; G, AE

SD-05 Templates

Hardware items; G, AE

SD-06 Wiring Diagrams

Sequence of operation and interface with other building systems.

Electrified hardware items; G, AE

SD-07 Certifications

Electrified hardware items; G, AE

Hardware for use on labelled fire doors; G, AE

SD-08 Manufacturer's Instructions

Installation; G

SD-10 Operation and Maintenance Data

Hardware Schedule items, Data Package 1; G

SD-11 Closeout Submittals

1.3 HARDWARE SCHEDULE

Prepare and submit hardware schedule in the following form:

Hard- ware Item	Quan- tity	Size	Reference		Mfr. Name and Catalog No.	Key Con- trol Symbols	UL Mark (If fire rated and listed)	BHMA Finish Designa- tion
			Type	Finish				
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1.4 QUALITY ASSURANCE

1.5.1 Hardware Manufacturers and Modifications

Provide, as far as feasible, locks, hinges, pivots, and closers of one lock, hinge, pivot, or closer manufacturer's make. Modify hardware as necessary to provide features indicated or specified.

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver hardware in original individual containers, complete with necessary appurtenances including fasteners and instructions. Mark each individual container with item number as shown in hardware schedule. Deliver permanent keys and removable cores to the Contracting Officer, either directly or by certified mail. Deliver construction master keys with the locks. Provide secure storage for hardware at project site.

1.6 EXISTING CONDITIONS

Hardware Supplier shall verify all existing conditions in the field to ensure compatibility with hardware specified in the Hardware Sets herein. Any discrepancies between the existing field conditions and hardware specified shall be brought to the attention of the Architect immediately. Hardware Supplier shall not order any hardware until all discrepancies are rectified and the Architect grants written approval.

1.7 ELECTRICAL SYSTEM ROUGHING IN

Coordinate layout and installation of electrified door hardware with connections to power supplies, fire alarm system and detection devices, access control system, security system, building control system.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

Listed below are the manufacturers and their abbreviations used in the

Hardware Schedule in Appendix "A", along with a list of other acceptable manufacturers.

Item:	Manufacturer	Acceptable Manufacturer
Hinges	(IVE) Ives	Hager, McKinney
Pivots	(IVE) Ives	Rixson
Locks	(SCH) Schlage	Sargent, Best
Cylinders	(BES) Best	No Substitution.
Exit Devices	(VON) Von Duprin	Precision
Closers	(LCN) LCN	Sargent* only cast iron closers
Push & Pull Plates	(IVE) Ive	Quality
Kickplates	(IVE) Ives	Quality
Stops & Holders-interior	(IVE) Ives	Quality
Overhead Stops	(GLY) Glynn Johnson	Sargent
Thresholds	(ZER) Zero	National Guard. Pemko
Seals & Bottoms	(ZER) Zero	National Guard. Pemko
Key Cabinets	(LUN) Lund	National Guard. Pemko

2.2 GENERAL

2.2.1 TEMPLATE HARDWARE

Hardware to be applied to metal or to prefinished doors shall be made to template. Promptly furnish template information or templates to door and frame manufacturers. Template hinges shall conform to BHMA A156.7. Coordinate hardware items to prevent interference with other hardware.

2.2.2 HARDWARE FOR FIRE DOORS AND EXIT DOORS

Provide all hardware necessary to meet the requirements of NFPA 80 for fire doors and NFPA 101 for exit doors, as well as to other requirements specified, even if such hardware is not specifically mentioned in Appendix A, entitled "Hardware Schedule." Such hardware shall bear the label of Underwriters Laboratories, Inc., and be listed in UL Bld Mat Dir or labeled and listed by another testing laboratory acceptable to the Contracting Officer.

2.3 HARDWARE ITEMS

Hinges, pivots, locks, latches, exit devices, bolts, and closers shall be clearly and permanently marked with the manufacturer's name or trademark where it will be visible after the item is installed. For closers with covers, the name or trademark may be beneath the cover.

2.3.1 Hinges

BHMA A156.1, full mortise three knuckle concealed bearing hinges, 114 by 114 millimeters unless otherwise specified. Construct loose pin hinges for exterior doors and reverse-bevel interior doors so that pins will be nonremovable when door is closed. Other antifriction bearing hinges may be provided in lieu of ball-bearing hinges.

Size and weights of hinges shall conform to the following requirements:

Doors Up to 36"	4-1/2" high regular weight
Greater than 36" up to 40"	5" high regular weight
Greater than 40" up to 48"	5" high heavy weight

Quantity of hinges shall be provided to conform to the following requirements.

Doors up to 60" in height	2 hinges
Doors over 60" to 90" in height	3 hinges
Doors over 90" to 120 " in height	4 hinges

2.3.2 Pivots

BHMA A156.4.

2.3.3 Continuous Hinges

- a. For exterior doors up to 600lbs, and 4'-0" wide
- b. To be constructed of extruded aluminum 6063-T6 alloy.
- c. Hinges must be self lubricating continuous gear type
- d. Shall be cycle tested for 1,500,000 repetitions
- e. Shall exceed ANSI/BHMA A156.26
- f. Where required, must be factory machined to accommodate power transfer (CTP option)

2.3.4 Locks and Latches

2.3.4.1 Mortise Locks and Latches

BHMA A156.13, Series 1000, Operational Grade 1, Security Grade 2.
Provide mortise locks with escutcheons not less than 178 by 57 mm with a bushing at least 6 mm long. Cut escutcheons to suit cylinders and provide trim items with straight, beveled, or smoothly rounded sides, corners, and edges. Levers and roses of mortise locks shall have screwless shanks and no exposed screws.

- a. Chassis: cold-rolled steel, handing field-changeable without disassembly.
- b. Latchbolts: 3/4 inch throw stainless steel anti-friction type.
- c. Lever Trim: through-bolted, accessible design, cast lever or solid extruded bar type levers as scheduled. Filled hollow tube design unacceptable.
- d. Spindles: security design independent break-away. Breakage of outside lever does not allow access to inside lever's hubworks to gain wrongful entry.
- e. Thumbturns: accessible design not requiring pinching or twisting motions to operate.
- f. Deadbolts: stainless steel 1-inch throw.

- g. Electric operation: Manufacturer-installed continuous duty solenoid.
- h. Strikes: 16 gage curved steel, bronze or brass with 1 inch deep box construction, lips of sufficient length to clear trim and protect clothing.

2.3.4.2 Auxiliary Locks

BHMA A156.5, Grade 1.

2.3.5 Exit Devices

BHMA A156.3, Grade 1. Provide adjustable strikes for rim type and vertical rod devices. Provide open back strikes for pairs of doors with mortise and vertical rod devices. Provide escutcheons not less than 178 by 57 mm.

- a. Furnish stainless steel touch bars on all exit devices.
- b. Touch bar and touch bar end caps shall overlap the mechanism case.
- c. Touch bar sub assembly shall be minimum .160" thick, with minimum .060 supports.
- d. Touch bar surface shall be minimum 2-1/4" high x 18" long for 36" doors, and minimum 2-1/4" high x 24" long for doors wider than 36".
- e. Exit device touch bars shall be equipped with a fluid sound dampening feature.
- f. Furnish exit devices, less bottom rod, on all cross corridor pairs of doors, where doors are for compartmentalization only.
- g. Rim and Mortise type devices shall have 3/4" throw latch bolt. Surface and Concealed Vertical Rod devices shall have 5/8" throw latch bolt. Latch bolt security deadlocking shall be standard.
- h. All internal springs shall be compression type.
- i. Lever trim shall match the balance of the project. Levers shall be solid forged brass or bronze. Lever return springs shall be compression type. Lever trim shall be breakaway type: when rotational force of 35 ft.lbs. is applied, lever trim will appear to break. Lever trim can then be reset to normal function, without disassembly. Lever shall be protected by a shear pin, which will withstand a rotational force of 55 ft.lbs. before shearing, to prevent further damage to lever. Lever shall not separate from the escutcheon. Escutcheons shall be forged brass or bronze, with (4) thru-bolts anchoring trim assembly to exit device chassis. Cylinders shall be recessed from face of escutcheon.
- j. Furnish all necessary Glass Bead Kits where exit device may interfere with raised glass beads on doors.
- k. Certifications: Devices shall be Underwriters Laboratories listed

for Panic Hardware (FVSR) SA163. Fire Devices shall be Underwriters Laboratories™ listed Fire Exit Hardware (GXHX) R4501, A Label.

1. Cycle Testing: Exit devices shall be certified by an independent testing lab for 1,000,000 cycles. Certifications: Shall exceed standards of ANSI A156.13.

2.3.6 Exit Locks With Alarm

BHMA A156.5, Type E0431 (with full-width horizontal actuating bar) for single doors; Type E0431 (with actuating bar) or E0471 (with actuating bar and top and bottom bolts, both leaves active) for pairs of doors, unless otherwise specified. Provide terminals for connection to remote indicating panel. Provide outside control key.

2.3.7 Cylinders and Cores

Provide cylinders for new locks, including locks provided under other sections of this specification. Cylinders shall be products of the Best Lock Corporation and shall have interchangeable cores which are removable by a special control key. The cores shall have seven pin tumblers and shall be factory set using the A4 system and F keyway. Submit a core code sheet with the cores. Provide temporary cores for contractor's use during construction.

2.3.8 Keying System

Owner will provide keying of permanent cores compatible with existing keying system. Contractor to deliver permanent cores and keys to Owner for keying and installation.

2.3.9 Lock Trim

Cast, forged, or heavy wrought construction and commercial plain design.

2.3.9.1 Knobs and Roses

In addition to meeting test requirements of BHMA A156.2 and BHMA A156.13, levers, roses, and escutcheons shall be 1.25 mm thick if unreinforced. If reinforced, outer shell shall be 0.89 mm thick and combined thickness shall be 1.78 mm, except knob shanks shall be 1.52 mm thick.

2.3.9.2 Lever Handle Locks

Lever handle locks shall have a breakaway feature (such as a weakened spindle or a shear key) to prevent irreparable damage to the lock when a force in excess of that specified in BHMA A156.13 is applied to the lever handle. Lever handles shall return to within 13 mm of the door face.

2.3.9.3 Texture

Provide knurled or abrasive coated knobs or lever handles where specified in paragraph entitled "Hardware Schedule" for doors which are accessible to blind persons and which lead to dangerous areas.

2.3.10 Keys

Furnish two change keys for each interchangeable core, furnish two control keys. Furnish a quantity of key blanks equal to 20 percent of the total number of change keys. Stamp each key with appropriate key control symbol and "U.S. property - Do not duplicate." Do not place room numbers on keys.

2.3.11 Door Bolts

BHMA A156.16. Provide dustproof strikes for bottom bolts, except for doors having metal thresholds. Automatic latching flush bolts: BHMA A156.3, Type 25.

2.3.12 Closers

BHMA A156.4, Series C02000, Grade 1, with PT 4C. Provide with brackets, arms, mounting devices, fasteners, full size covers, except at storefront mounting, pivots, cement cases, and other features necessary for the particular application. Size closers in accordance with manufacturer's recommendations, or provide multi-size closers, Sizes 1 through 6, and list sizes in the Hardware Schedule. Provide manufacturer's 10 year warranty.

- a. Closer location: Unless otherwise indicated, closers shall not be visible on the public side of doors. Closers opening into public spaces shall be provided with parallel arms and brackets to suit.
- b. Surface Closers: Full rack-and-pinion type cylinder with removable non-ferrous cover and cast iron body. Double heat treated pinion shaft, single piece forged piston, chrome-silicon steel spring. 4010 or 4110 series, as per application. Non handed, universal closers will not be acceptable.
- c. Testing: Closers to be independent lab-tested at 10,000,000 cycles. Exterior door closers to be tested to 100 hours of ASTM B117 salt spray test. Furnish data on request.
- d. Install with thru-bolts at wood doors unless doors are provided with closer blocking. Closers to be non-sized and adjustable.
- e. Provide plates, brackets and special templating when needed for interface with particular header, door and wall conditions and neighboring hardware.
- f. Opening pressure: interior doors 5 lb., labeled fire doors 15 lb.
- g. Provide closers with separate adjusting valves for closing speed, latching speed and back check, fourth valve for delayed action where scheduled.
- h. Provide extra-duty arms (EDA) at doors scheduled with parallel arm units.
- i. Closers at exterior doors shall be furnished with all weather

fluid. Closer fluid shall have the same viscosity over temperature ranges from 120 F to -30 F. Furnish data on request.

j. Certifications: Shall exceed standards of ANSI A156.4.

2.3.12.1 Identification Marking

Engrave each closer with manufacturer's name or trademark, date of manufacture, and manufacturer's size designation located to be visible after installation.

2.3.13 Overhead Holders

BHMA A156.8.

Overhead Stops: Stainless steel. Non-plastic mechanisms and finished metal end caps. Field-changeable hold-open, friction and stop-only functions. Coordinate templating for door and wall conditions and neighboring hardware. Furnish drop plates at locations where regular arm closer are used in conjunction with overhead stops.

2.3.14 Closer Holder-Release Devices

BHMA A156.15.

2.3.15 Door Protection Plates

BHMA A156.6.

2.3.15.1 Sizes of Armor and Kick Plates

Width for single doors shall be 50 mm less than door width; width for pairs of doors shall be 25 mm less than door width. Height of kick plates shall be 200 mm.

2.3.16 Door Stops

BHMA A156.16.

a. Provide stops to limit the degree of opening, helping to prevent damage to adjacent walls, columns, equipment, the door or its hardware.

b. Wall stops: Furnish concave bumper at locations Locksets having a button operational feature, and convex at all other locations. Furnish toggle mounting at dry wall substrate locations. Furnish wood screws at wood substrate locations. Furnish expansion shield mounting at masonry substrate locations.

c. Floor Stops: All stops to be fastened to concrete shall use expansion shields and machine screws.

2.3.17 Silencers

Provide three silencers for each single door, two for each pair.

2.3.18 Thresholds

BHMA A156.21. Provide aluminum thresholds equal to Zero #626A at exterior doors, and Zero #655A or 1675A (as applicable) at interior doors.

2.3.19 Weather Stripping Gasketing

BHMA A156.22. Provide the type and function designation where specified in Appendix "A" entitled "Hardware Schedule". A set shall include head and jamb seals, sweep strips, and, for pairs of doors, astragals. Air leakage of weather stripped doors shall not exceed 2.19×10^{-5} 5.48×10^{-5} cms per minute of air per square meter of door area when tested in accordance with ASTM E 283.

2.3.20 Soundproofing Gasketing

BHMA A156.22. A set shall include adjustable doorstops at head and jambs and an automatic door bottom, both of extruded aluminum, clear (natural) anodized, surface applied, with vinyl fin seals between plunger and housing. Doorstops shall have solid neoprene tube, silicone rubber, or closed-cell sponge gasket. Door bottoms shall have adjustable operating rod and silicone rubber or closed-cell sponge neoprene gasket. Doorstops shall be mitered at corners. Provide the type and function designation where specified in paragraph entitled "Hardware Sets".

2.3.21 Special Tools

Provide special tools, such as spanner and socket wrenches and dogging keys, required to service and adjust hardware items.

2.4 FASTENERS

Provide fasteners of proper type, quality, size, quantity, and finish with hardware. Fasteners exposed to weather shall be of nonferrous metal or stainless steel. Provide fasteners of type necessary to accomplish a permanent installation.

2.5 FINISHES

BHMA A156.18. Hardware shall have BHMA 630 finish (satin stainless steel), unless specified otherwise. Provide items not manufactured in stainless steel in BHMA 626 finish (satin chromium plated) over brass or bronze, except surface door closers which shall have aluminum paint finish, and except steel hinges which shall have BHMA 652 finish (satin chromium plated).

Hinges for exterior doors shall be stainless steel with BHMA 630. Exit devices may be provided in BHMA 626 finish in lieu of BHMA 630 finish except where BHMA 630 is specified under paragraph entitled "Hardware Sets".

Exposed parts of concealed closers shall have finish to match lock and door trim. Hardware for aluminum doors shall be finished to match the doors.

2.6 KEY CONTROL SYSTEM

BHMA A156.5, four hinged panel type cabinet, of size required to yield a

capacity (number of hooks) 50 percent greater than the number of key changes used for door locks. Provide envelopes, labels, tags with self-locking key chips, receipt forms, 3-way visible card index, and temporary and permanent markers.

PART 3 EXECUTION

3.1 INSTALLATION

Install hardware in accordance with manufacturers' printed instructions. Fasten hardware to wood surfaces with full-threaded wood screws or sheet metal screws. Provide machine screws set in expansion shields for fastening hardware to solid concrete and masonry surfaces. Provide toggle bolts where required for fastening to hollow core construction. Provide through bolts where necessary for satisfactory installation. Install jamb-applied gaskets before closers, overhead stops, rim strikes, etc. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.

3.1.1 Weather Stripping Installation

Handle and install weather stripping so as to prevent damage. Provide full contact, weather-tight seals. Doors shall operate without binding.

3.1.1.1 Stop-Applied Weather Stripping

Fasten in place with color-matched sheet metal screws not more than 225 mm o.c. after doors and frames have been finish painted.

3.1.1.2 Interlocking Type Weather Stripping

Provide interlocking, self-adjusting type on heads and jambs and flexible hook type at sills. Nail weather stripping to door 25 mm o.c. and to heads and jambs at 100 mm o.c.

3.1.1.3 Spring Tension Type Weather Stripping

Provide spring tension type on heads and jambs. Provide bronze nails with bronze, stainless steel nails with stainless steel. Space nails not more than 38 mm o.c.

3.1.2 Soundproofing Installation

Install as specified for stop-applied weather stripping.

3.1.3 Threshold Installation

Extend thresholds the full width of the opening and notch end for jamb stops. Set thresholds in a full bed of sealant and anchor to floor with cadmium-plated, countersunk, steel screws in expansion sleeves.

3.2 FIRE DOORS AND EXIT DOORS

Install hardware in accordance with NFPA 80 for fire doors, NFPA 101 for

exit doors.

3.3 HARDWARE LOCATIONS

SDI 100, unless indicated or specified otherwise.

- a. Kick and Armor Plates: Push side of single-acting doors. Both sides of double-acting doors.
- b. Floor stops: No more than 102 mm from wall.

3.4 DEMONSTRATION

Demonstrate electrical, electronic and pneumatic hardware systems, including adjustment and maintenance procedures.

3.5 FIELD QUALITY CONTROL

After installation, protect hardware from paint, stains, blemishes, and other damage until acceptance of work. Submit notice of testing 15 days before scheduled, so that testing can be witnessed by the Contracting Officer. Adjust hinges, locks, latches, bolts, holders, closers, and other items to operate properly. Correct, repair, and finish, as directed, errors in cutting and fitting and damage to adjoining work.

3.6 HARDWARE SCHEDULE

Refer to Appendix "A".

-- End of Section --

APPENDIX "A"

ARCHITECTURAL DOOR HARDWARE SCHEDULE

Notes:

1. Complete specification includes hardware schedule and hardware specification.
2. Alternate manufacturers are listed in the hardware specification for the purposes of competitive bidding. These alternates may vary in performance or appearance from the "basis of design" items listed here.

Hardware Group No. 01

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfgr
3	EA HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA MORTISE CYLINDER	1E74	626	BES
1	EA STOREROOM LOCK	L9080W O7A LESS CYLINDER	630	SCH
1	EA DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA SILENCER	SR64	GRY	IVE

Hardware Group No. 01A

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfgr
3	EA HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA MORTISE CYLINDER	1E74	626	BES
1	EA STOREROOM LOCK	L9080W O7A LESS CYLINDER	630	SCH
1	EA SURFACE CLOSER	4011 EDA	689	LCN
1	EA DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA SILENCER	SR64	GRY	IVE

Hardware Group No. 01B

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfgr
3	EA HINGE	3CB1 4.5 X 4.5 NRP	652	IVE
1	EA MORTISE CYLINDER	1E74	626	BES
1	EA STOREROOM LOCK	L9080W O7A LESS CYLINDER	630	SCH
1	EA SURFACE CLOSER	4111 EDA	689	LCN
1	EA DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA SILENCER	SR64	GRY	IVE

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Hardware Group No. 01C

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfgr
3	EA HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA MORTISE CYLINDER	1E74	626	BES
1	EA STOREROOM LOCK	L9080W 807A KNURL LESS CYLINDER	630	SCH
1	EA SURFACE CLOSER	4011 EDA	689	LCN
1	EA KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA SILENCER	SR64	GRY	IVE

Hardware Group No. 01D

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfgr
3	EA HINGE	3CB1 4.5 X 4.5 NRP	652	IVE
1	EA MORTISE CYLINDER	1E74	626	BES
1	EA STOREROOM LOCK	L9080W 807A KNURL LESS CYLINDER	630	SCH
1	EA SURFACE CLOSER	4111 EDA	689	LCN
1	EA DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA SILENCER	SR64	GRY	IVE

Hardware Group No. 01E

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfgr
3	EA HINGE	3CB1 4.5 X 4.5 NRP	652	IVE
1	EA MORTISE CYLINDER	1E74	626	BES
1	EA CLASSROOM DEADBOLT	83T7S STK (2-3/4" DBLT STRIKE)	626	BES
1	EA STOREROOM LOCK	L9080W 07A LESS CYLINDER	630	SCH
1	EA SURFACE CLOSER	4111 EDA	689	LCN
1	EA DOME STOP W/RISER	FS436 X 435	626	IVE
1	SET PERIMETER SEAL	328A HEAD & JAMBS	628	ZER
1	EA DOOR SWEEP	339A	AL	ZER

Hardware Group No. 01F

Provide each SGL door(s) with the following:

Quantity	Description	Model Number	Finish	Mfgr
3	EA HINGE	3CB1 4.5 X 4.5 NRP	652	IVE
2	EA MORTISE CYLINDER	1E74	626	BES
1	EA STOREROOM LOCK	L9080W 07A LESS CYLINDER	630	SCH
1	EA SURFACE CLOSER	4111 EDA	689	LCN
1	EA DOME STOP W/RISER	FS436 X 435	626	IVE
1	SET PERIMETER SEAL	328A HEAD & JAMBS	628	ZER

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1	EA	DOOR SWEEP	339A	AL	ZER
Hardware Group No. 01G					
Provide each SGL door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W 807A KNURL LESS CYLINDER	630	SCH
1	EA	SURFACE CLOSER	4011 EDA X ST1544	689	LCN
1	EA	OVERHEAD STOP	410S	630	GLY
1	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 01H					
Provide each SGL door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W 07A LESS CYLINDER	630	SCH
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 02					
Provide each SGL door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	OFFICE LOCK	L9056W 07A LESS CYLINDER	630	SCH
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE
1	EA	COAT & HAT HOOK	574	626	IVE

Hardware Group No. 02A					
Provide each SGL door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	OFFICE LOCK	L9056W 07A LESS CYLINDER	630	SCH
1	EA	SURFACE CLOSER	4011 EDA X ST1544	689	LCN
1	EA	OVERHEAD STOP	410S	630	GLY
1	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE

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3	EA	SILENCER	SR64	GRY	IVE
Hardware Group No. 02B					
Provide each SGL door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	OFFICE LOCK	L9056W 07A LESS CYLINDER	630	SCH
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 03

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	CLASSROOM LOCK	L9070W 07A LESS CYLINDER	630	SCH
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 03A

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	CLASSROOM LOCK	L9070W 07A LESS CYLINDER	630	SCH
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 03B

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	CLASSROOM LOCK	L9070W 07A LESS CYLINDER	630	SCH
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
1	SET	SMOKE SEAL	188A HEAD & JAMBS	628	ZER
1	EA	DOOR SWEEP	339A	AL	ZER

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Hardware Group No. 03C

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W 07A LESS O/S TRIM, LESS	630	SCH
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
1	SET	SMOKE SEAL	188A HEAD & JAMBS	628	ZER
1	EA	DOOR SWEEP	339A	AL	ZER

Hardware Group No. 03D

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	CLASSROOM LOCK	L9070W 07A LESS CYLINDER	630	SCH
1	EA	SURFACE CLOSER	4011 EDA X ST1544	689	LCN
1	EA	OVERHEAD STOP	410S	630	GLY
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 03E

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	CLASSROOM LOCK	L9070W 07A LESS CYLINDER	630	SCH
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 03F

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	CLASSROOM LOCK	L9070W 07A LESS CYLINDER	630	SCH
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
1	SET	ACOUSTIC SEAL	475A HEAD & JAMBS	628	ZER
1	EA	AUTO DOOR BOTTOM	365	AL	ZER

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3	EA	SILENCER	SR64	GRY	IVE
Hardware Group No. 04					
Provide each SGL door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE LATCH	L9010P 07A	630	SCH
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 04A					
Provide each SGL door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE LATCH	L9010P 07A	630	SCH
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 04B					
Provide each PR door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
2	EA	SGL DUMMY TRIM	L0170 07A	630	SCH
2	EA	SURFACE CLOSER	4011 EDA	689	LCN
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 04C					
Provide each PR door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
2	EA	SGL DUMMY TRIM	L0170 07A	630	SCH
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 05					
Provide each SGL door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK	L9040P 07A XL11-800	630	SCH
1	EA	MOP PLATE	8400 4" X 1" LDW	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE

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3	EA	SILENCER	SR64	GRY	IVE
Hardware Group No. 06					
Provide each SGL door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
1	EA	INTERMEDIATE PIVOT	7212-INT	626	IVE
1	SET	PIVOTS	7253	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	DEADBOLT LOCK	STOREROOM L460 LESS CYLINDER	630	SCH
1	EA	ROLLER LATCH	RL1152	630	IVE
1	EA	EDGE PULL	BF94	630	ROC
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 07					
Provide each PR door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W 07A LESS CYLINDER	630	SCH
1	EA	SGL DUMMY TRIM	L0170 07A	630	SCH
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 07A					
Provide each PR door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	PR	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W 07A LESS CYLINDER	630	SCH
1	EA	COORDINATOR	COR X FL X MB (AS REQUIRED)	628	IVE
2	EA	SURFACE CLOSER	4011 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

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Hardware Group No. 07B

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	PR	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W 07A LESS CYLINDER	630	SCH
1	EA	COORDINATOR	COR X FL X MB (AS REQUIRED)	628	IVE
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 07C

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	PR	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W 807A KNURL LESS CYLINDER	630	SCH
1	EA	COORDINATOR	COR X FL X MB (AS REQUIRED)	628	IVE
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 07D

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	PR	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W 07A LESS CYLINDER	630	SCH
1	EA	COORDINATOR	COR X FL X MB (AS REQUIRED)	628	IVE
2	EA	SURFACE CLOSER	4011 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW	630	IVE
1	SET	ACOUSTIC SEAL	475A HEAD & JAMBS	628	ZER
2	EA	AUTO DOOR BOTTOM	365	AL	ZER

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Hardware Group No. 07E

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W 07A LESS CYLINDER	630	SCH
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	SET	PERIMETER SEAL	328A HEAD & JAMBS	628	ZER
2	EA	DOOR SWEEP	339A	AL	ZER

Hardware Group No. 07F

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	SET	CONST LATCHING BOLT	FB51P	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W 07A LESS CYLINDER	630	SCH
1	EA	COORDINATOR	COR X FL X MB (AS REQUIRED)	628	IVE
2	EA	SURFACE CLOSER	4011 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 07G

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	PR	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W 07A LESS CYLINDER	630	SCH
1	EA	COORDINATOR	COR X FL X MB (AS REQUIRED)	628	IVE
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW	630	IVE
1	SET	PERIMETER SEAL	328A (JAMBS) X 428A (HEAD)	628	ZER
2	EA	DOOR SWEEP	339A	AL	ZER

Hardware Group No. 07H

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	PR	AUTO FLUSH BOLT	FB41P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W 07A LESS O/S TRIM LESS CYLINDER	630	SCH
1	EA	COORDINATOR	COR X FL X MB (AS REQUIRED)	628	IVE
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 07J

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
2	EA	SGL DUMMY TRIM	L0170 07A	630	SCH
1	EA	PASSAGE LATCH	L9010P 07A	630	SCH
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 08 VESTIBULE TO MEN/WOMEN ROOM

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	PUSH PLATE	8200 4 X 16	630	IVE
1	EA	PULL PLATE	8302-0 4 X 16	630	IVE
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	MOP PLATE	8400 4" X 1" LDW	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

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Hardware Group No. 09

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	DEADBOLT LOCK	CLASSROOM L463W LESS CYLINDER	626	SCH
2	EA	PULL	DP6111	630	FOR
2	EA	SURFACE CLOSER	4011 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 10 MEN/WOMEN ROOM

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	DEADBOLT LOCK	CLASSROOM L463W LESS CYLINDER	626	SCH
1	EA	PUSH PLATE	8200 4 X 16	630	IVE
1	EA	PULL PLATE	8302-0 4 X 16	630	IVE
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	MOP PLATE	8400 4" X 1" LDW	630	IVE
1	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 11 STAIR

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
1	EA	FIRE EXIT DEVICE	99L-F-BE X 994L-BE X 07A TRIM	626	VON
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

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Hardware Group No. 11A STAIR

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
1	EA	FIRE EXIT DEVICE	99L-F-BE X 994L-BE X 07A TRIM	626	VON
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 12 STAIR

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
2	EA	FIRE EXIT DEVICE	9927-L-F-BE X 994L-BE X 07A X LBR	626	VON
2	EA	SURFACE CLOSER	4011 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 13

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
2	EA	FIRE EXIT DEVICE	9947-L-F-BE X 994L-BE X 07A X LBR	626	VON
2	EA	SURFACE CLOSER	4011 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
2	EA	MAGNETIC HOLD-OPEN	SEM 7850 24V	AL	LCN
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 14 DOUBLE EGRESS DOOR

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
2	EA	FIRE EXIT DEVICE	9947-L-F-BE X 994L-BE X 07A X LBR	626	VON
2	EA	SURFACE CLOSER	4010T DE	689	LCN
2	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
2	EA	MAGNETIC HOLD-OPEN	SEM 7850 24V	AL	LCN

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2	EA	SILENCER	SR64	GRY	IVE
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Hardware Group No. 15

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
1	EA	FIRE EXIT DEVICE	99L-F X 994L X 07A TRIM	626	VON
1	EA	RIM CYLINDER	IE72	626	SCH
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 16

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
1	EA	PANIC DEVICE	99L-BE X 994L-BE X 07A TRIM	626	VON
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 17

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
2	EA	PULL	DP6111	630	FOR
2	EA	RIM CYLINDER	IE72	626	SCH
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 18

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
2	EA	FIRE EXIT DEVICE	9947-L-F X 994L X 07A TRIM	626	VON
2	EA	RIM CYLINDER	IE72	626	SCH
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE

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2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 18A

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
2	EA	FIRE EXIT DEVICE	9947-L-F X 994L X 07A TRIM	626	VON
2	EA	RIM CYLINDER	IE72	626	SCH
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
1	SET	PERIMETER SEAL	328A HEAD & JAMBS	628	ZER
2	EA	DOOR SWEEP	339A	AL	ZER

Hardware Group No. 19

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	PR	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	CLASSROOM LOCK	L9070W 07A LESS CYLINDER	630	SCH
1	EA	COORDINATOR	COR X FL X MB (AS REQUIRED)	628	IVE
2	EA	SURFACE CLOSER	4011 EDA	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 19A

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	PR	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	CLASSROOM LOCK	L9070W 07A LESS CYLINDER	630	SCH
1	EA	COORDINATOR	COR X FL X MB (AS REQUIRED)	628	IVE
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	SET	ACOUSTIC SEAL	475A HEAD & JAMBS	628	ZER
2	EA	AUTO DOOR BOTTOM	365	AL	ZER
2	EA	KICK PLATE	8400 8" X 1" LDW	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

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Hardware Group No. 20 STAIR

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1HW 4.5 X 4.5	652	IVE
1	EA	FIRE EXIT DEVICE	99EO-F	626	VON
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 21

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	652	IVE
2	EA	PANIC DEVICE	CD9927-NL-OP	626	VON
2	EA	MORTISE CYLINDER	1E74	626	BES
2	EA	PULL	DP6111	630	FOR
2	EA	RIM CYLINDER	1E72	626	SCH
2	EA	SURFACE CLOSER	4020	689	LCN
2	EA	OVERHEAD STOP	100S	630	GLY
1	SET	ACOUSTIC SEAL	475A HEAD & JAMBS	628	ZER
2	EA	AUTO DOOR BOTTOM	365	AL	ZER

Hardware Group No. 21A

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	652	IVE
2	EA	PANIC DEVICE	CD9927-NL-OP	626	VON
2	EA	MORTISE CYLINDER	1E74	626	BES
2	EA	PULL	DP6111	630	FOR
2	EA	RIM CYLINDER	1E72	626	SCH
2	EA	SURFACE CLOSER	4011 EDA X ST1544	689	LCN
2	EA	OVERHEAD STOP	100S	630	GLY
1	SET	ACOUSTIC SEAL	475A HEAD & JAMBS	628	ZER
2	EA	AUTO DOOR BOTTOM	365	AL	ZER

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Hardware Group No. EX-01

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	630	IVE
2	EA	PANIC DEVICE	CD9947WDC-NL-OP X LBR	626	VON
2	EA	MORTISE CYLINDER	1E74	626	BES
2	EA	PULL	DP6111	630	FOR
2	EA	RIM CYLINDER	1E72	626	SCH
2	EA	SURFACE CLOSER	4111 EDA CUSH	689	LCN
2	EA	OVERHEAD STOP	100S	630	GLY
2	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	SET	PERIMETER SEAL	328A (JAMBS) X 428A (HEAD)	628	ZER
2	EA	DOOR SWEEP	339A	AL	ZER

Hardware Group No. EX-02

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC DEVICE	99 EO	626	VON
1	EA	SURFACE CLOSER	4111 EDA CUSH	689	LCN
1	EA	OVERHEAD STOP	100S	630	GLY
1	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	SET	PERIMETER SEAL	328A (JAMBS) X 428A (HEAD)	628	ZER
1	EA	DOOR SWEEP	339A	AL	ZER

Hardware Group No. EX-03

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	630	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W 07A LESS CYLINDER	630	SCH
1	EA	SGL DUMMY TRIM	L0170 07A	630	SCH
2	EA	SURFACE CLOSER	4111 EDA CUSH	689	LCN
2	EA	OVERHEAD STOP	100S	630	GLY
2	EA	KICK PLATE	8400 8" X 1" LDW	630	IVE
1	SET	PERIMETER SEAL	328A HEAD & JAMBS	628	ZER
2	EA	DOOR SWEEP	339A	AL	ZER

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Hardware Group No. EX-04

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	630	IVE
2	EA	PANIC DEVICE	CD9927-NL-OP X LBR	626	VON
2	EA	MORTISE CYLINDER	1E74	626	BES
2	EA	PULL	DP6111	630	FOR
2	EA	RIM CYLINDER	1E72	626	SCH
2	EA	SURFACE CLOSER	4111 EDA CUSH	689	LCN
2	EA	OVERHEAD STOP	100S	630	GLY
2	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
1	SET	PERIMETER SEAL	328A (JAMBS) X 428A (HEAD)	628	ZER
2	EA	DOOR SWEEP	339A	AL	ZER

Hardware Group No. EX-05

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	630	IVE
2	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W O7A LESS CYLINDER	630	SCH
2	EA	SURFACE CLOSER	4111 EDA CUSH	689	LCN
2	EA	OVERHEAD STOP	100S	630	GLY
2	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
1	SET	PERIMETER SEAL	328A (JAMBS) X 428A (HEAD)	628	ZER
2	EA	DOOR SWEEP	339A	AL	ZER

Hardware Group No. EX-06

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	STOREROOM LOCK	L9080W O7A LESS CYLINDER	630	SCH
1	EA	SURFACE CLOSER	4111 EDA CUSH	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
1	SET	PERIMETER SEAL	328A (JAMBS) X 428A (HEAD)	628	ZER
1	EA	DOOR SWEEP	339A	AL	ZER

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Hardware Group No. S01 CARD READER- SECURITY HW (CR,LS,PS)

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	POWER TRANSFER	EPT10	689	VON
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	ELECTRIC LOCK	RX-L9080WEU 07A FAIL SECURE LESS	630	SCH
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. S01A CARD READER- SECURITY HW (CR, LS,PS)

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	POWER TRANSFER	EPT10	689	VON
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	ELECTRIC LOCK	RX-L9080WEU 07A FAIL SECURE LESS	630	SCH
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. S01B CARD READER- SECURITY HW (CR, LS,PS)

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	POWER TRANSFER	EPT10	689	VON
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	ELECTRIC LOCK	RX-L9080WEU 07A FAIL SECURE LESS	630	SCH
1	EA	SURFACE CLOSER	4111 EDA CUSH	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

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Hardware Group No. S01C CARD READER- SECURITY HW (CR,LS,PS)

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	POWER TRANSFER	EPT10	689	VON
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	ELECTRIC LOCK	RX-L9080WEU 07A FAIL SECURE LESS	630	SCH
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
1	SET	ACOUSTIC SEAL	475A HEAD & JAMBS	628	ZER
1	EA	AUTO DOOR BOTTOM	365	AL	ZER

Hardware Group No. S01D CARD READER- SECURITY HW (CR,LS,PS)

Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	POWER TRANSFER	EPT10	689	VON
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	ELECTRIC LOCK	RX-L9080WEU 07A FAIL SECURE LESS	630	SCH
1	EA	SURFACE CLOSER	4020	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
1	SET	ACOUSTIC SEAL	475A HEAD & JAMBS	628	ZER
1	EA	AUTO DOOR BOTTOM	365	AL	ZER

Hardware Group No. S02 CARD READER- SECURITY HW (CR,LS,DS)

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	652	IVE
2	EA	POWER TRANSFER	EPT10	689	VON
2	EA	FIRE EXIT DEVICE	RX-EL9947L-F X 994L X 07A TRIM 24VDC	626	VON
2	EA	RIM CYLINDER	IE72	626	SCH
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
2	EA	SILENCER	SR64	GRY	IVE
1	EA	POWER SUPPLY	PS873-2 SERIES	GRY	VON

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Hardware Group No. S02A CARD READER- SECURITY HW (CR,LS,DS)

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	652	IVE
2	EA	POWER TRANSFER	EPT10	689	VON
2	EA	FIRE EXIT DEVICE	RX-EL9947L-F X 994L X 07A TRIM 24VDC	626	VON
2	EA	RIM CYLINDER	IE72	626	SCH
2	EA	SURFACE CLOSER	4020	689	LCN
2	EA	OVERHEAD STOP	100S	630	GLY
1	SET	ACOUSTIC SEAL	475A HEAD & JAMBS	628	ZER
2	EA	AUTO DOOR BOTTOM	365	AL	ZER
1	EA	POWER SUPPLY	PS873-2 SERIES	GRY	VON

Hardware Group No. S02B CARD READER- SECURITY HW (CR,LS,DS)

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	652	IVE
2	EA	POWER TRANSFER	EPT10	689	VON
2	EA	PANIC DEVICE	RX-EL9927NL-OP X 24VDC	626	VON
2	EA	PULL	DP6111	630	FOR
2	EA	RIM CYLINDER	IE72	626	SCH
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	OVERHEAD STOP	100S	630	GLY
1	SET	ACOUSTIC SEAL	475A HEAD & JAMBS	628	ZER
2	EA	AUTO DOOR BOTTOM	365	AL	ZER
1	EA	POWER SUPPLY	PS873-2 SERIES	GRY	VON

Hardware Group No. S03 CARD READER- SECURITY HW (CR, LS,DS) PR DR

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	POWER TRANSFER	EPT10	689	VON
1	PR	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	ELECTRIC LOCK	RX-L9080WEU 07A FAIL SECURE LESS	630	SCH
1	EA	COORDINATOR	COR X FL X MB (AS REQUIRED)	628	IVE
2	EA	SURFACE CLOSER	4011 EDA	689	LCN
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE

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Hardware Group No. S03A CARD READER- SECURITY HW (CR, LS,DS) PR DR

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	POWER TRANSFER	EPT10	689	VON
1	PR	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	ELECTRIC LOCK	RX-L9080WEU 07A FAIL SECURE LESS	630	SCH
1	EA	COORDINATOR	COR X FL X MB (AS REQUIRED)	628	IVE
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE

Hardware Group No. S03B CARD READER- SECURITY HW (CR, LS,DS) PR DR

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1 4.5 X 4.5	652	IVE
1	EA	POWER TRANSFER	EPT10	689	VON
1	PR	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	MORTISE CYLINDER	1E74	626	BES
1	EA	ELECTRIC LOCK	RX-L9080WEU 07A FAIL SECURE LESS	630	SCH
1	EA	COORDINATOR	COR X FL X MB (AS REQUIRED)	628	IVE
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
1	SET	PERIMETER SEAL	328A (JAMBS) X 428A (HEAD)	628	ZER
2	EA	DOOR SWEEP	339A	AL	ZER

Hardware Group No. S04 CARD READER- SECURITY HW (CR,LS,DS)

Provide each PR door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	652	IVE
2	EA	POWER TRANSFER	EPT10	689	VON
2	EA	PANIC DEVICE	RX-EL9927NL-OP X 24VDC	626	VON
2	EA	PULL	DP6111	630	FOR
2	EA	RIM CYLINDER	IE72	626	SCH
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	SET	ACOUSTIC SEAL	475A HEAD & JAMBS	628	ZER
2	EA	AUTO DOOR BOTTOM	365	AL	ZER

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2	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
2	EA	SILENCER	SR64	GRY	IVE
1	EA	POWER SUPPLY	PS873-2 SERIES	GRY	VON
Hardware Group No. S04A CARD READER- SECURITY HW (CR,LS,DS)					
Provide each PR door(s) with the following:					
Quantity		Description	Model Number	Finish	Mfgr
6	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	652	IVE
2	EA	POWER TRANSFER	EPT10	689	VON
2	EA	PANIC DEVICE	CD9927-NL-OP X LBR	626	VON
2	EA	MORTISE CYLINDER	1E74	626	BES
2	EA	PULL	DP6111	630	FOR
2	EA	RIM CYLINDER	IE72	626	SCH
2	EA	SURFACE CLOSER	4111 EDA CUSH	689	LCN
1	SET	ACOUSTIC SEAL	475A HEAD & JAMBS	628	ZER
2	EA	AUTO DOOR BOTTOM	365	AL	ZER
2	EA	KICK PLATE	8400 8" X 2" LDW	630	IVE
2	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
2	EA	SILENCER	SR64	GRY	IVE
1	EA	POWER SUPPLY	PS873-2 SERIES	GRY	VON

Hardware Group No. S05 CARD READER- SECURITY HW (DELAYED EGRESS)
Provide each SGL door(s) with the following:

Quantity		Description	Model Number	Finish	Mfgr
3	EA	HINGE	3CB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	POWER TRANSFER	EPT10	689	VON
1	EA	FIRE EXIT DEVICE	CX-99L-F X 994L X 07A TRIM 24VDC	626	VON
1	EA	MORTISE CYLINDER	1E74- 1 1/4" LENGTH	626	SCH
1	EA	RIM CYLINDER	IE72	626	SCH
1	EA	SURFACE CLOSER	4011 EDA	689	LCN
1	EA	DOME STOP W/RISER	FS436 X 435	626	IVE
3	EA	SILENCER	SR64	GRY	IVE
1	EA	POWER SUPPLY	PS871SERIES	GRY	VON
1	EA	ELECTRONIC HORN	1910-1 (24VDC)	WHT	LOC

NOTE: PANIC DEVICE EQUIPPED WITH LOCAL ALARM AND 15-SECOND DELAY.
KEY ACCESS BYPASSES ALARM AND DELAY. DEVICE TIED TO FIRE ALARM SYSTEM.
IN THE EVENT OF AN EMERGENCY, POWER IS DISCONNECTED AND FREE EXIT IS PERMITTED.

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Hardware Group No. S06 CARD READER- SECURITY HW (CR,LS,DS)
Provide each PR door(s) with the following:

Quantity	Description	Model Number	Finish	Mfgr
6	EA HINGE	3CB1HW 4.5 X 4.5 NRP	630	IVE
2	EA POWER TRANSFER	EPT10	689	VON
2	EA PANIC DEVICE	RX-EL9927NL-OP X 24VDC	626	VON
2	EA MORTISE CYLINDER	1E74	626	BES
2	EA PULL	DP6111	630	FOR
2	EA RIM CYLINDER	IE72	626	SCH
2	EA SURFACE CLOSER	4111 EDA CUSH	689	LCN
2	EA OVERHEAD STOP	100S	630	GLY
1	SET PERIMETER SEAL	328A (JAMBS) X 428A (HEAD)	628	ZER
2	EA DOOR SWEEP	339A	AL	ZER
1	EA POWER SUPPLY	PS873-2 SERIES	GRY	VON

End of Hardware Schedule

SECTION 08810

GLASS AND GLAZING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 509	(1994) Elastomeric Cellular Preformed Gasket and Sealing Material
ASTM C 864	(1999) Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers
ASTM C 920	(1998) Elastomeric Joint Sealants
ASTM C 1036	(1991; R 1997) Flat Glass
ASTM C 1048	(1997b) Heat-Treated Flat Glass - Kind HS, Kind FT Coated and Uncoated Glass
ASTM C 1172	(1996e1) Laminated Architectural Flat Glass
ASTM E 773	(1997) Accelerated Weathering of Sealed Insulating Glass Units
ASTM E 774	(1997) Classification of the Durability of Sealed Insulating Glass Units

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

16 CFR 1201	Safety Standard for Architectural Glazing Materials
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GLASS ASSOCIATION OF NORTH AMERICA (GANA)

GANA Glazing Manual	(1997) Glazing Manual
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NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 80	(1999) Fire Doors and Fire Windows
NFPA 252	(1995) Fire Tests of Door Assemblies
NFPA 257	(1996) Fire Tests for Window and Glass

Block Assemblies

PART 2 PRODUCTS

2.1 MANUFACTURERS

2.1.1 Basis of Design

Float glass as manufactured by Viracon or approved equal.
Patterned Glass basis for design manufacturer - Joel Berman Glass Studios,
"ONDA."

2.2 GLASS

2.2.1 Annealed Glass

Annealed glass shall be Type I transparent flat type, Class 1 - clear,
Quality q3 - glazing select, conforming to ASTM C 1036.

2.2.2 Textured Glass

Not Used.

2.2.3 Wired Glass

Wired glass shall be Type II flat type, Class q8 - glazing, Form 1 - wired and polished both sides conforming to ASTM C 1036. Wire mesh shall be polished stainless steel Mesh 2 - square. Wired glass for fire-rated windows shall bear an identifying UL label or the label of a nationally recognized testing agency, and shall be rated for 45 minutes when tested in accordance with NFPA 257. Wired glass for fire-rated doors shall be tested as part of a door assembly in accordance with NFPA 252.

2.2.4 Laminated Glass

Laminated glass in insulated units types GL-1, GL-2, GL-3 and GL-4, and as glass type GL-5 shall consist of two 3 mm layers of Type I transparent float glass, Class 1-clear Quality q3 - glazing select, conforming to ASTM C 1036. Glass shall be bonded together with 1.52 mm thick PVB interlayer under pressure, or alternatives such as resin laminates, conforming to requirements of 16 CFR 1201 and ASTM C 1172. Color shall be clear. Laminated glass type GL-7 shall be similar, but layers shall be 5 mm.

2.2.4.1 Film-Opacified Laminated Glass

Type 4: Film-opacified laminated glass in insulated unit type GL-4 as specified above, shall have a polyester or polyethylene film 0.025 mm to 0.127 mm thick attached to No. 2 surface of a sputtered solar-reflective film, conforming to ASTM C 1048. Film opacification shall be compatible to and specifically developed for application to solar reflective films. Color shall be as chosen by Contracting Officer.

2.2.5 Silk Screened Glass

Silk screened glass shall be annealed glass with a white ceramic frit dot pattern, 8 mm dia. on 9 mm staggered centers, on the number 2 surface.

2.2.6 Tempered Glass

ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated), Type I, Class 1 transparent, Quality q3, 6 mm thick, conforming to ASTM C 1048 and GANA Standards Manual. Color shall be clear.

2.3 INSULATING GLASS UNITS

Insulating glass units shall be Class A preassembled units of dual-seal construction consisting of glass panes separated by an aluminum, steel, or stainless steel spacer and dehydrated space conforming to ASTM E 773 and ASTM E 774. Spacer shall be roll-formed, with bent or tightly welded or keyed and sealed joints to completely seal the spacer periphery and eliminate moisture and hydrocarbon vapor transmission into airspace through the corners. Primary seal shall be compressed polyisobutylene and the secondary seal shall be a specially formulated silicone. Glass types shall be as follows:

2.3.1 Type GL-1 - Low E Insulating Glass Unit

Exterior pane shall be annealed glass, with anti-reflective low-emissivity coating on the Number 2 surface. Interior pane shall be laminated.

Glass Performance:

Transmittance

Visible Light:	70%
Solar Energy:	32%
Ultra-Violet:	10%

Reflectance

Visible Light-Exterior:	11%
Visible Light-Interior:	12%
Solar Energy:	31%

ASHRAE U-Value

Winter Nighttime:	.29 Btu/(hr x sqft x F)
Summer Daytime:	.28 Btu/(hr x sqft x F)

Shading Coefficient:	.43
Solar Factor (SHGC):	.37

Relative Heat Gain:	90 Btu/hr x sqft
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2.3.2 Type GL-2 - Not Used.

2.3.3 Type GL-3 - Low E Insulating Silk-Screened Glass Unit

Exterior pane shall be silk-screened glass, with ceramic frit and anti-reflective low-emissivity coating on the Number 2 surface. Interior pane shall be laminated.

Glass Performance:

Transmittance

Visible Light:	50%
Solar Energy:	24%
Ultra-Violet:	07%

Reflectance

Visible Light-Exterior:	19%
Visible Light-Interior:	21%
Solar Energy:	30%

ASHRAE U-Value

Winter Nighttime:	.29 Btu/(hr x sqft x F)
Summer Daytime:	.29 Btu/(hr x sqft x F)

Shading Coefficient:	.33
Solar Factor (SHGC):	.29

Relative Heat Gain:	70 Btu/hr x sqft
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2.3.4 Type GL-4 - Low E Insulating Opaque Glass Unit

Exterior pane shall be annealed glass, with anti-reflective low-emissivity coating on the Number 2 surface. Interior pane shall be laminated film-opacified, with film on the Number 3 surface.

Glass Performance:

Transmittance

Visible Light:	70%
Solar Energy:	32%
Ultra-Violet:	10%

Reflectance

Visible Light-Exterior:	11%
Visible Light-Interior:	12%
Solar Energy:	31%

ASHRAE U-Value

Winter Nighttime:	.29 Btu/(hr x sqft x F)
Summer Daytime:	.28 Btu/(hr x sqft x F)

Shading Coefficient:	.43
Solar Factor (SHGC):	.37

Relative Heat Gain:	90 Btu/hr x sqft
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2.4 MIRRORS

2.4.1 Glass Mirrors

Glass for mirrors shall be Type I transparent flat type, Class 1-clear, Glazing Quality q1 6 mm thick conforming to ASTM C 1036. Glass color shall be clear. Glass shall be coated on one surface with silver coating, copper protective coating, and mirror backing paint. Silver coating shall be highly adhesive pure silver coating of a thickness which shall provide reflectivity of 83 percent or more of incident light when viewed through 6 mm thick glass, and shall be free of pinholes or other defects. Copper protective coating shall be pure bright reflective copper, homogeneous without sludge, pinholes or other defects, and shall be of proper thickness to prevent "adhesion pull" by mirror backing paint. Mirror backing paint shall consist of two coats of special scratch and abrasion-resistant paint, and shall be baked in uniform thickness to provide a protection for silver and copper coatings which will permit normal cutting and edge fabrication.

2.4.2 Mirror Accessories

2.4.2.1 Mastic

Mastic for setting mirrors shall be a polymer type mirror mastic resistant to water, shock, cracking, vibration and thermal expansion. Mastic shall be compatible with mirror backing paint, and shall be approved by mirror manufacturer.

2.4.2.2 Mirror Frames

Mirrors shall be provided with mirror frames (J-mold channels) fabricated of one-piece roll-formed Type 304 stainless steel with No. 4 brushed satin finish and concealed fasteners which will keep mirrors snug to wall. Frames shall be 32 x 6 x 6 mm continuous at top and bottom of mirrors. Concealed fasteners of type to suit wall construction material shall be provided with mirror frames. Provide mirror frames where shown.

2.4.2.3 Mirror Clips

Concealed fasteners of type to suit wall construction material shall be provided with clips.

2.5 GLAZING ACCESSORIES

2.5.1 Preformed Tape

Preformed tape shall be elastomeric rubber extruded into a ribbon of a width and thickness suitable for specific application. Tape shall be of type which will remain resilient, have excellent adhesion, and be chemically compatible to glass, metal, or wood.

2.5.2 Sealant

Sealant shall be elastomeric conforming to ASTM C 920, Type S or M, Grade NS, Class 12.5, Use G, of type chemically compatible with setting blocks, preformed sealing tape and sealants used in manufacturing insulating glass. Color of sealant shall be as selected.

2.5.3 Glazing Gaskets

Glazing gaskets shall be extruded with continuous integral locking projection designed to engage into metal glass holding members to provide a watertight seal during dynamic loading, building movements and thermal movements. Glazing gaskets for a single glazed opening shall be continuous one-piece units with factory-fabricated injection-molded corners free of flashing and burrs. Glazing gaskets shall be in lengths or units recommended by manufacturer to ensure against pull-back at corners. Glazing gasket profiles shall be as indicated on drawings.

2.5.3.1 Fixed Glazing Gaskets

Fixed glazing gaskets shall be closed-cell (sponge) smooth extruded compression gaskets of cured elastomeric virgin neoprene compounds conforming to ASTM C 509, Type 2, Option 1.

2.5.3.2 Wedge Glazing Gaskets

Wedge glazing gaskets shall be high-quality extrusions of cured elastomeric virgin neoprene compounds, ozone resistant, conforming to ASTM C 864, Option 1, Shore A durometer between 65 and 75.

2.5.3.3 Aluminum Framing Glazing Gaskets

Glazing gaskets for aluminum framing shall be permanent, elastic, non-shrinking, non-migrating, watertight and weathertight.

PART 3 EXECUTION

3.1 PREPARATION

Openings and framing systems scheduled to receive glass shall be examined for compliance with approved shop drawings, GANA Glazing Manual and glass manufacturer's recommendations including size, squareness, offsets at corners, presence and function of weep system, face and edge clearance requirements and effective sealing between joints of glass-framing members. Detrimental materials shall be removed from glazing rabbet and glass surfaces and wiped dry with solvent. Glazing surfaces shall be dry and free of frost.

3.2 INSTALLATION

Glass and glazing work shall be performed in accordance with approved shop drawings, GANA Glazing Manual, glass manufacturer's instructions and warranty requirements. Glass shall be installed with factory labels intact and removed only when instructed. Wired glass and fire/safety rated glass shall be installed in accordance with NFPA 80. Edges and corners shall not be ground, nipped or cut after leaving factory. Springing, forcing or twisting of units during installation will not be permitted.

3.3 CLEANING

Upon completion of project, outside surfaces of glass shall be washed clean and the inside surfaces of glass shall be washed and polished in accordance with glass manufacturer's recommendations.

3.4 PROTECTION

Glass work shall be protected immediately after installation. Glazed openings shall be identified with suitable warning tapes, cloth or paper flags, attached with non-staining adhesives. Reflective glass shall be protected with a protective material to eliminate any contamination of the reflective coating. Protective material shall be placed far enough away from the coated glass to allow air to circulate to reduce heat buildup and moisture accumulation on the glass. Glass units which are broken, chipped, cracked, abraded, or otherwise damaged during construction activities shall be removed and replaced with new units.

3.5 GLASS SCHEDULE

Glass Type	Thickness	outer lite	inner lite
1	25.4 mm	clear	clear laminated
2	Not Used		
3	25.4 mm	clear w/ frit #2	clear laminated
4	25.4 mm	clear	opaque laminated

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Glass Type	Thickness	outer lite	inner lite
5	6.35 mm	clear laminated	
6	6.35 mm	clear tempered	
7	9.53 mm	clear laminated	
8	6.35 mm	clear wired	
9	9.53 mm	clear tempered	
10	12.7 mm	clear tempered	

-- End of Section --